Revision: Angles in Polygons

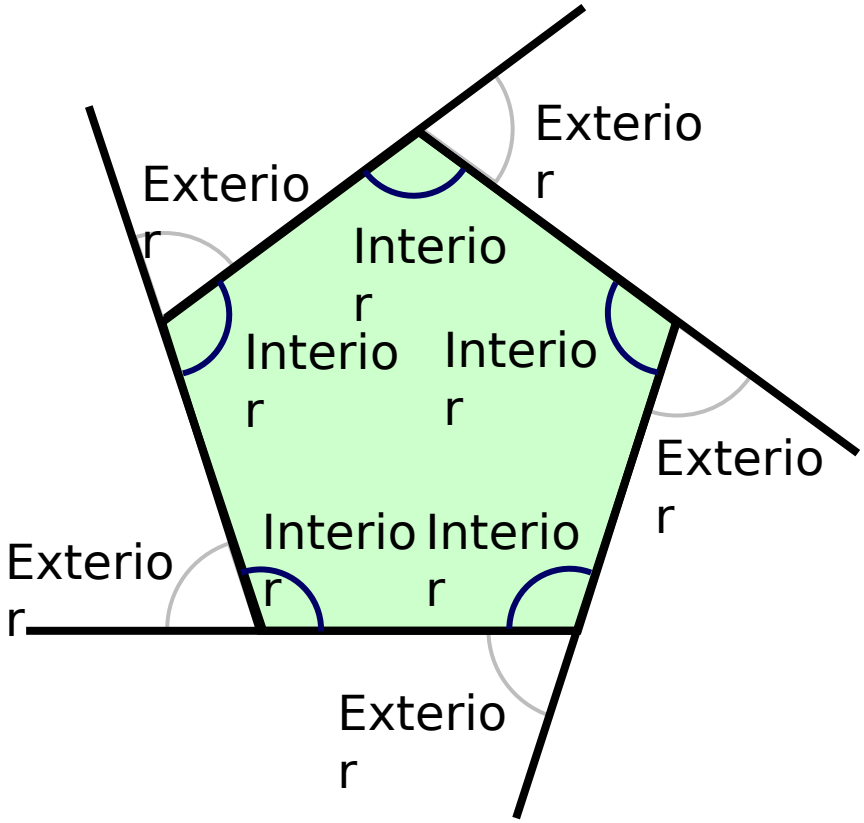
Do now:

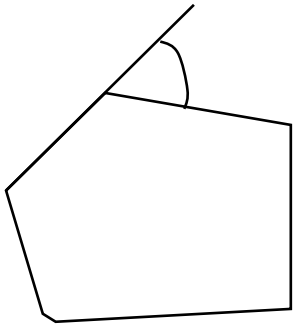
1. What is the mathematical name of a:
   a) triangle with unequal sides
   b) six sided shape
   c) Quadrilateral with only one pair of parallel sides

2. Sketch, marking it's key features:

a) A rhombus
b) A kite
c) Parallelogram
d) A **regular** pentagon

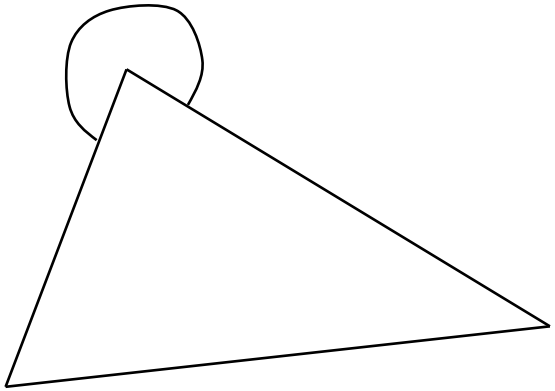
3. What is the sum of the interior angles in a:
   a. Triangle
   b. Quadrilateral
   c. pentagon
   d. n sided shape?


Exterior
Exterior
Interior
Interior
Interior
Exterior
Exterior
Interior
Interior
Exterior

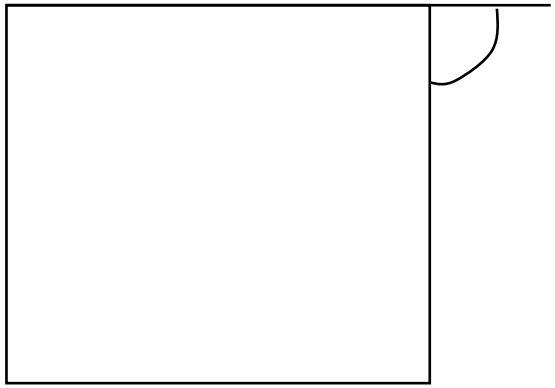


An **exterior angle** of a polygon is an angle between the line extended from one side, and an adjacent side.

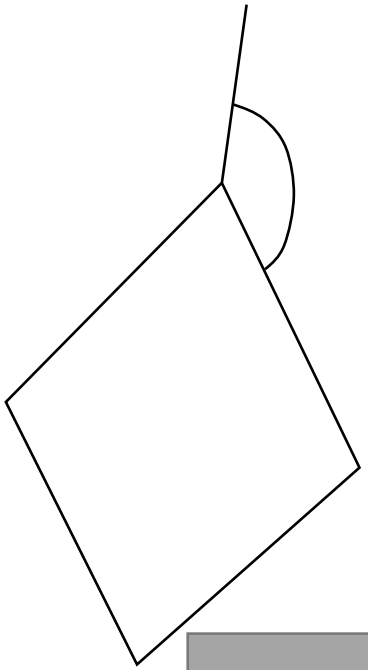
Which of these are exterior angles of the polygon?



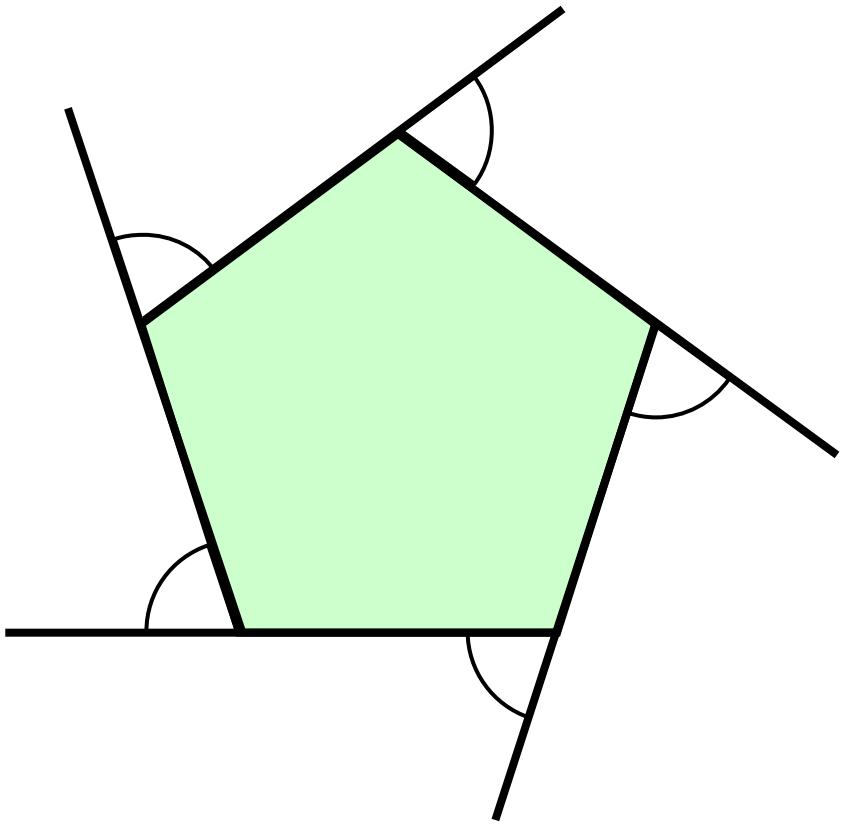
?



?



?

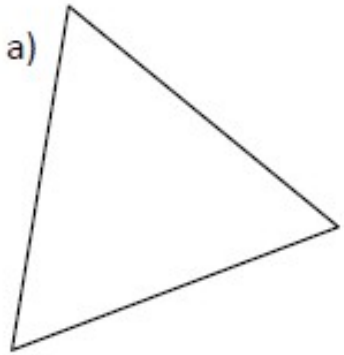


This means that the exterior angles of a polygon add up to 360°

Worked Example

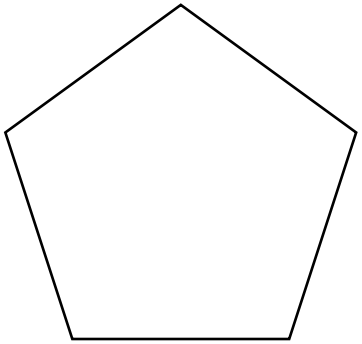
Find the interior and exterior angles

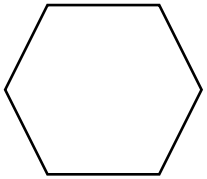
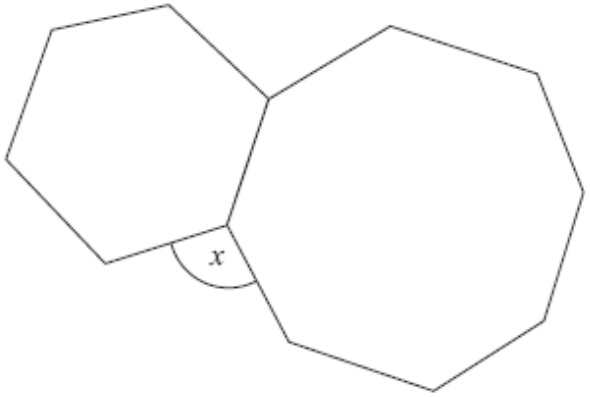
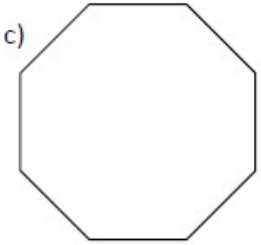
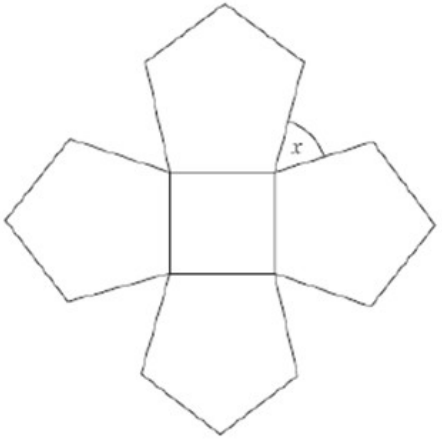
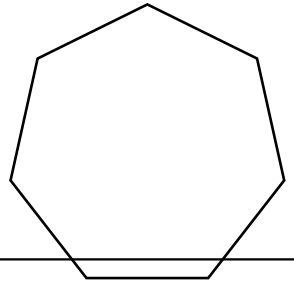
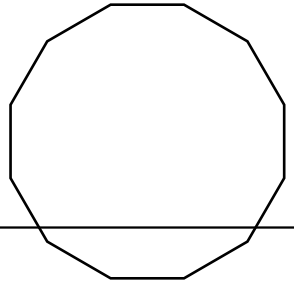
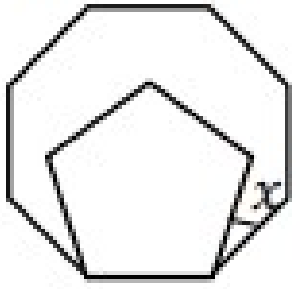
a)

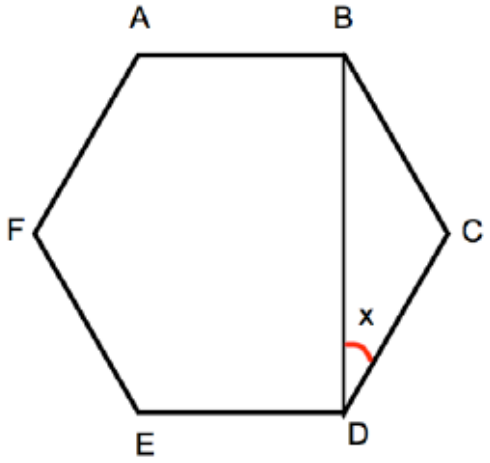


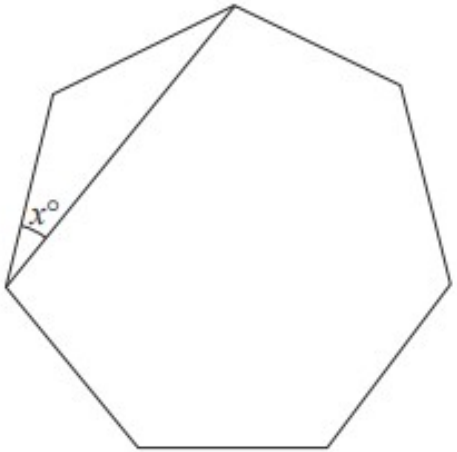
Your Turn

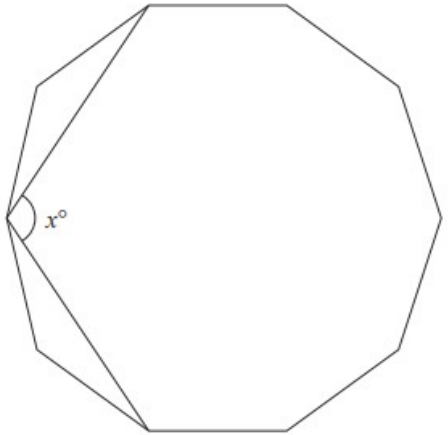
Find the interior and exterior angles

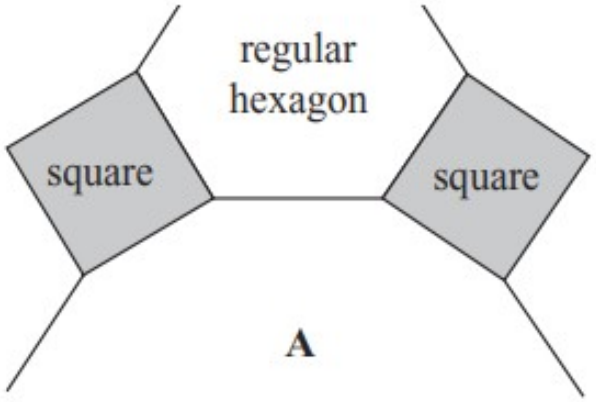


Calculate interior and exterior angles	Calculate interior and exterior angles	Calculate x
	A 10 sided regular polygon (decagon)	
c) 	A 100 sided regular polygon (hectogon or hecatontagon)	
	How many sides would a regular polygon have if its exterior angle was 24 degrees?	
	The ratio of the interior to exterior angles on a regular polygon is 3:1. What is the name of the polygon.	

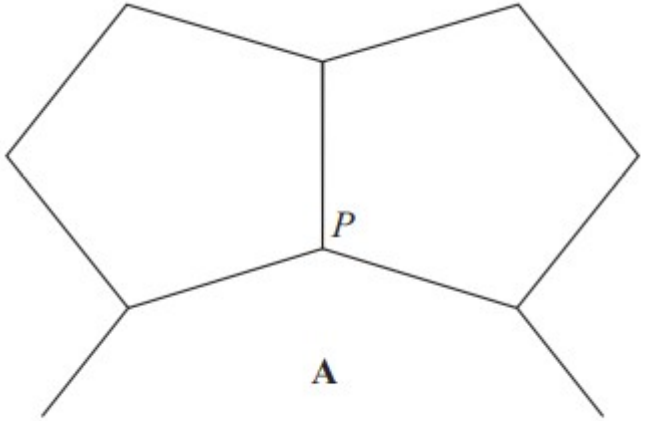






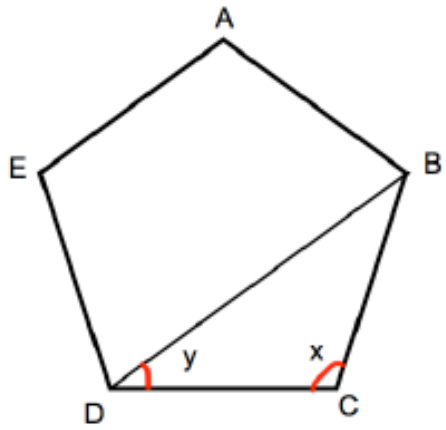


Calculate how many sides regular polygon A has



Calculate how many sides regular polygon A has

4. Shown below is a regular pentagon ABCDE.



(a) Work out angle x.

x = ...°

(2)

(b) Work out angle y.

y = ...°

(2)

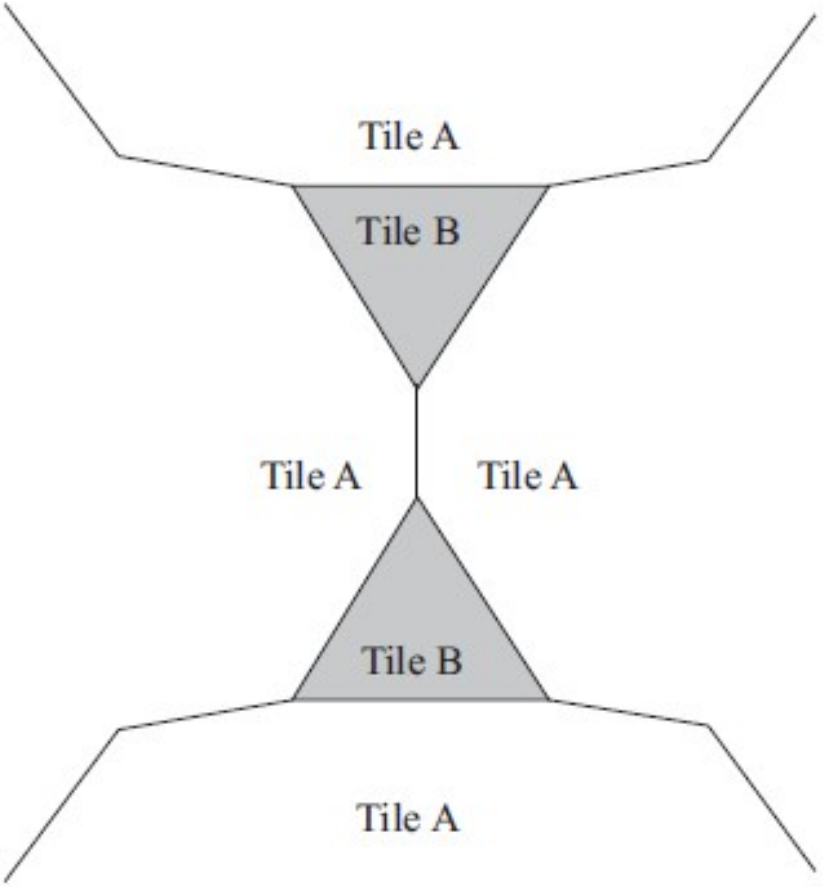
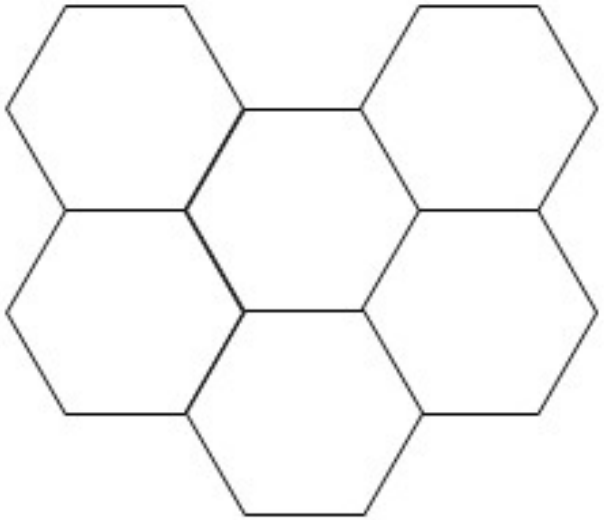


Diagram **NOT** accurately drawn

Question: The pattern is made from two types of tiles, tile A and tile B.
Both tile A and tile B are regular polygons.
Work out the number of sides tile A has.

Explain why regular hexagons tessellate.



.....

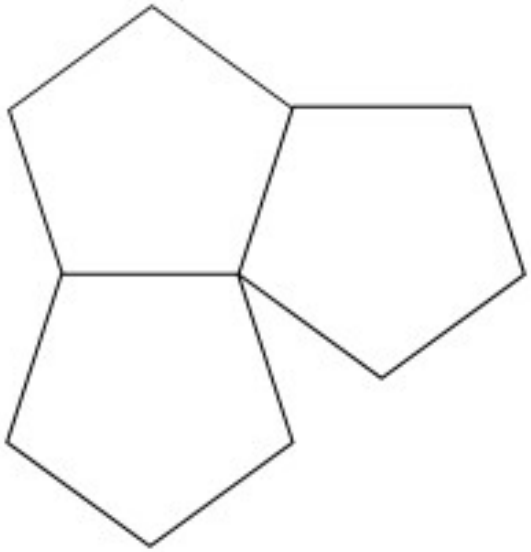
.....

.....

.....

.....

Explain why regular pentagons do not tessellate.



.....

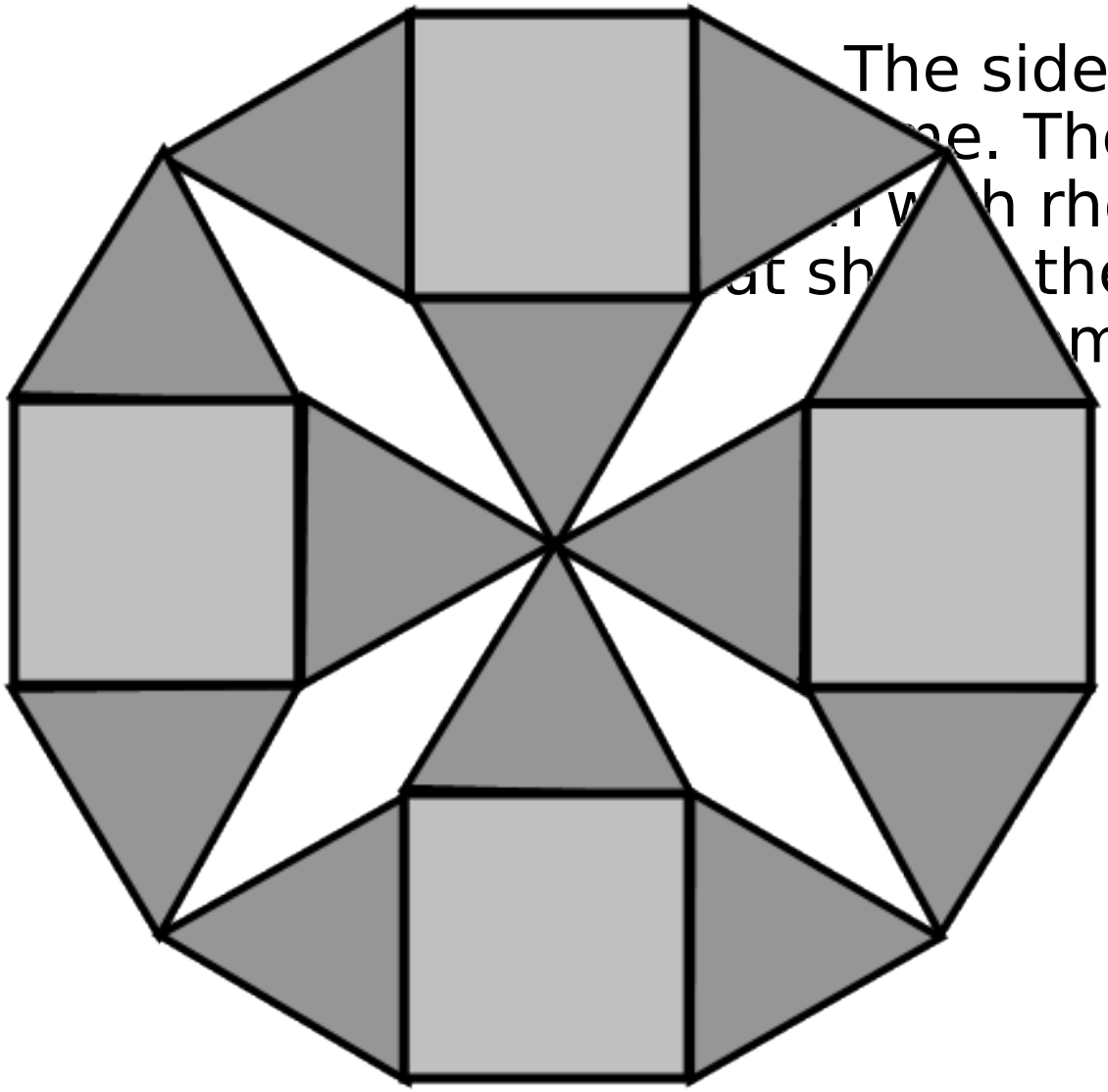
.....

.....

.....

.....

In the diagram some tiles that are squares or equilateral triangles have been arranged.



The side lengths are all
e. The gaps need
h rhombuses.
at sh the angle in each
mbus be?